

1. (Twice amended) Lens checking apparatus for the optical control of ophthalmic lenses comprising a container to receive a lens to be examined, an illuminating device with at least one monochromatic light source which provides a monochromatic illuminating light having one predetermined wavelength, and a condenser to illuminate the lens and a CCD camera as an image receiving device to receive the image of the lens, wherein the resolution of the image of the lens is increased by using the monochromatic illuminating light to illuminate the lens.

REMARKS

Specification

Section headings have been added in the specification to overcome the objections set forth in the Office Action.

The first paragraph on page 3 has been amended to overcome the objection of drawings. The image of the contact lens is referenced as character "31". Attached hereto is a marked-up version of the changes made to the **specification** by the present amendment. The attached page is captioned "Version With Marking To Show Changes Made."

Drawings

The objection of drawings has been overcome by the substituted Fig.1 submitted herewith and the above described amendment of the specification.

Pending claims

Claim 1 has been amended to more clearly point out and distinctly claim the invention. These amendments do not contain new matter and are fully supported by the specification. For example, support for the phrase "a monochromatic light source" can be found on page 4, line 1; support for the phrase "the resolution of the image of the lens is increased by using the monochromatic illuminating light to illuminate the lens" can be found in the paragraph bridging page 2 and page 3.

After these amendments are entered, twenty (20) Claims (claims 1-20) are pending. Attached hereto is a marked-up version of the changes made to the **claims** by

the present amendment. The attached page is captioned "Version With Marking To Show Changes Made."

Claim Objections

The objection of claim 1 has been overcome with the amendment of claim 1.

Claims Rejections under 35 U.S.C §102

Claims 1, 3 and 12 were rejected under 35 U.S.C. §102(e) as being anticipated by Yanagi (US6,118,528). For the following reasons, the Examiner's rejection is respectfully traversed.

Yanagi discloses a lens meter for determining the optical characteristics (i.e., the power distribution) of a lens (see, for example, col. 3, lines 6-13). In order to achieve his object, Yanagi uses a light source portion which emits measuring light having at least three different wavelengths (Abstract; col. 3, lines 14-17 and 32-52; col. 5, lines 7-10). Yanagi teaches that a measuring light having at least three different wavelengths is needed to convert a measurement value of the optical characteristic of a lens measured in a liquid into a measurement value of the optical characteristic of the identical lens measured in the air even if the refractive index of the material of the lens is unknown (col. 6, lines 34-67; col. 7, lines 1-41). Yanagi does not disclose nor suggest that using an illuminating light with several wavelengths would cause the deterioration in the quality of the produced image of a lens to be inspected for defects. Yanagi does not disclose nor suggest anything about how to minimize the deterioration of the image quality associated with an illuminating light having more than two different wavelengths, and therefore anything about using of a monochromatic illuminating light having one predetermined wavelength in reproducing the image of a contact lens with increased resolution.

In contrast to Yanagi, the present invention is directed to the inspection of contact lenses for defects such as cavities, tears, inclusions, contamination, leakages from the edge and the like. The present invention is to solve a problem different from the problem of Yanagi. The object of the present invention is achieved by using a monochromatic illuminating light having one predetermined wavelength. Applicants states, on page 3, lines 25-32, that using an illuminating light having several wavelengths would deteriorate the image quality of a lens to be inspected. Applicants respectfully submit

that, since Yanagi does not contains all of the elements of the invention and the present invention as currently claimed does not contains all of the elements of the lens meter of Yanagi, the present invention is not anticipated by Yanagi. Applicants respectfully request withdrawal of the 35 U.S.C. §102(e) rejection.

Claims Rejections under 35 U.S.C §103

Claims 2, 4, 5-7 and 13-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over WO 99/57581. For the following reasons, the Examiner's rejection is respectfully traversed.

As discussed above, a lens meter of Yanagi is different from the present invention. In Yanagi's lens meter, a light source is to provide a measuring light having at least three different wavelengths, whereas, in the present invention, a monochromatic light source is to provide a monochromatic illuminating light having one predetermined wavelength. Furthermore, Yanagi does not disclose nor suggest that using an illuminating light having several wavelengths would cause deterioration in the quality of the produced image of a lens to be inspected for defects. Yanagi does not disclose nor suggest anything about how to minimize the deterioration of the image quality associated with an illuminating light having more than two different wavelengths, and anything about using of a monochromatic illuminating light having one predetermined wavelength in reproducing the image of a contact lens with increased resolution. Applicants respectfully submit that Yanagi does not teach or provide a motivation to arrive at the present invention. As is well established, the motivation to modify the prior art must flow from some teachings in the art that suggest the desirability or incentive to make the modification needed to arrive at the claimed invention. See, for example, In re Laskowski, 10 U.S.P.Q.2d 1397, 1399 (Fed. Cir. 1989). Applicants respectfully submit that the Applicants invention as currently claimed is patentable over Yanagi and request withdrawal of the 35 U.S.C. §103(a) rejection.

Claims 8-10 and 18-12 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yanagi in view of Ebel et al (US 5,812,254). For the following reasons, the Examiner's rejection is respectfully traversed.

As discussed above, the primary reference (Yanagi) does not disclose nor suggest that using an illuminating light having several wavelengths would cause deterioration in the image quality of a lens to be inspected for defects. Yanagi does not

disclose nor suggest anything about how to minimize the deterioration of the image quality associated with an illuminating light having more than two different wavelengths, and anything about using of **a monochromatic illuminating light having one predetermined wavelength** in reproducing the image of a contact lens to be inspected with an **increased resolution**.

Like the primary reference, the secondary reference fails to disclose or suggest anything about how to minimize the deterioration of the image quality associated with an illuminating light having more than two different wavelengths, and anything about using of **a monochromatic illuminating light having one predetermined wavelength** in reproducing the image of a contact lens to be inspected with an **increased resolution**.

In sum, Applicants submits that the primary reference, alone or in combination with the secondary reference, does not teach or provide a motivation to arrive at the present invention, the Applicants invention as currently claimed is patentable over Yanagi in view of Ebel et al. and request withdrawal of the 35 U.S.C. §103(a) rejection.

Claim 11 was rejected under 35 U.S.C. §103(a) as being unpatentable over Yanagi in view of Ebel et al (US 5,812,254) and further in view of Davis (US 5,828,446). For the following reasons, the Examiner's rejection is respectfully traversed.

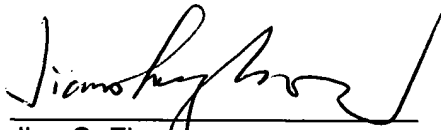
The combination of Yanagi with Ebel et al. also forms the basis for the rejection of claim 11 under 35 USC 103(a) in combination with one additional secondary reference (Davis). As discussed above, the combination of Yanagi with Ebel et al. does not render the present invention as currently claimed obvious. Davis discloses a dark field illuminating system for inspecting contact lenses. The device of Davis is different from the present invention. Moreover, Davis does not fill the gaps left by the primary reference and the first secondary reference, since it also fails to disclose or suggest anything about how to minimize the deterioration of the image quality associated with an illuminating light having more than two different wavelengths, and anything about using of **a monochromatic illuminating light having one predetermined wavelength** in reproducing the image of a contact lens to be inspected with an **increased resolution**. Applicant submits that the Applicants invention as currently claimed is patentable over Yanagi in view of Ebel et al and further in view of Davis and request withdrawal of the 35 U.S.C. §103(a) rejection.

CONCLUSION

In view of the foregoing and in conclusion, Applicants submit that the rejections set-forth in the Office Action have been overcome, and that all pending claims (claims 1-20) are now in condition for allowance.

Should the Examiner believe that a discussion with Applicants' representative would further the prosecution of this application, the Examiner is respectfully invited to contact the undersigned. Please address all correspondence to Thomas Hoxie, Novartis Corporation, Corporate Intellectual Property, One Health Plaza, Bldg. 430, East Hanover, NJ 07936-1080. The Commissioner is hereby authorized to charge any other fees which may be required under 37 C.F.R. §§1.16 and 1.17, or credit any overpayment, to Deposit Account No. 19-0134.

Respectfully submitted,


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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the specification:

Please amend the first paragraph on page 3 as follows:

In fig. 1, a lens checking apparatus 1 is illustrated. The lens checking apparatus comprises a transparent container 2, which is filled with a liquid. The liquid is preferably distilled water or physiological saline. In order to be examined, an ophthalmic lens to be checked, preferably a contact lens 3, is suitably placed in the container 2 using a pincette, the front face of the contact lens facing the bottom 4 of the container 2. The container 2 is preferably of concave shape, so that it acts like a lens when it is full. In addition, the container 2 is kept in a holder that can be displaced towards the optical axis 20. To illuminate the contact lens 3, a light-emitting diode (LED) 5 is provided, preferably an IR-diode 5 with a wavelength of $\lambda = 880 \text{ nm}$. However, within the context of the invention, other diodes with other wavelengths may also be used. The light of the IR-diode 5 is reflected by a mirror 6 and directed to a condenser lens 7 which concentrates the light so that it penetrates the container 2 in a manner that is as homogeneous and parallel as possible. It is also possible to dispense with the light reflection using a mirror 6, but in this set-up of the diode 5 directly below the container 2 which is filled with liquid, there is a danger that when the container 2 is filled, drops of liquid might drop onto the diode 5. The illuminated contact lens 3 is processed by a CCD camera 8, which feeds the image of the contact lens 3₁ to a computer 9, where it can be seen by a monitor 10 and can be evaluated by means of a computer-aided image-processing system. The defects in question may be cavities, tears, inclusions, contamination, leakages from the edge and the like, which can be detected by an automatic image analysis system. Apart from these defects, the diameter of the contact lens can also be determined automatically using appropriate software. The images of different lenses may also be stored, so that statistical information about the appearance of various types of defects can be given.

In the claims:

Please amend claim 1 as follows:

1. (Twice amended) Lens checking apparatus for the optical control of ophthalmic lenses comprising a container to received a lens to be examined, an illuminating device with at least one monochromatic light source which ~~emits~~provides a monochromatic illuminating light beam having one predetermined wavelength, and a condenser to illuminate the lens and a CCD camera as an image receiving device to receive the image of the lens, wherein the resolution of the image of the lens is increased by using the monochromatic illuminating light to illuminate the lens ~~whereby the light beam from the light source has a predetermined wavelength and a CCD camera is provided as the image receiving device.~~